The art of applying commercial "Best Practices" in the DOD

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Scope

How far can the military adopt commercial best practices, and not compromise or endanger DOD goals? What appears to be cost-saving and effective commercial practices could have a negative impact on our ability to win in the land, air, sea, space, and, cyberspace.

Objectives

1. Review Commercial "Best Practices"

2. Revisit Military Science / Philosophies

3. Achieving a balance of DOD and Commercial Practices

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"Best Practices"

"**Best Practices**" is a term or philosophy we are constantly being bombarded with in the DOD. Wikipedia states that "Best Practices" is an idea that asserts that there is a technique, method, process, activity, incentive or reward that is more effective at delivering a particular outcome than any other technique.

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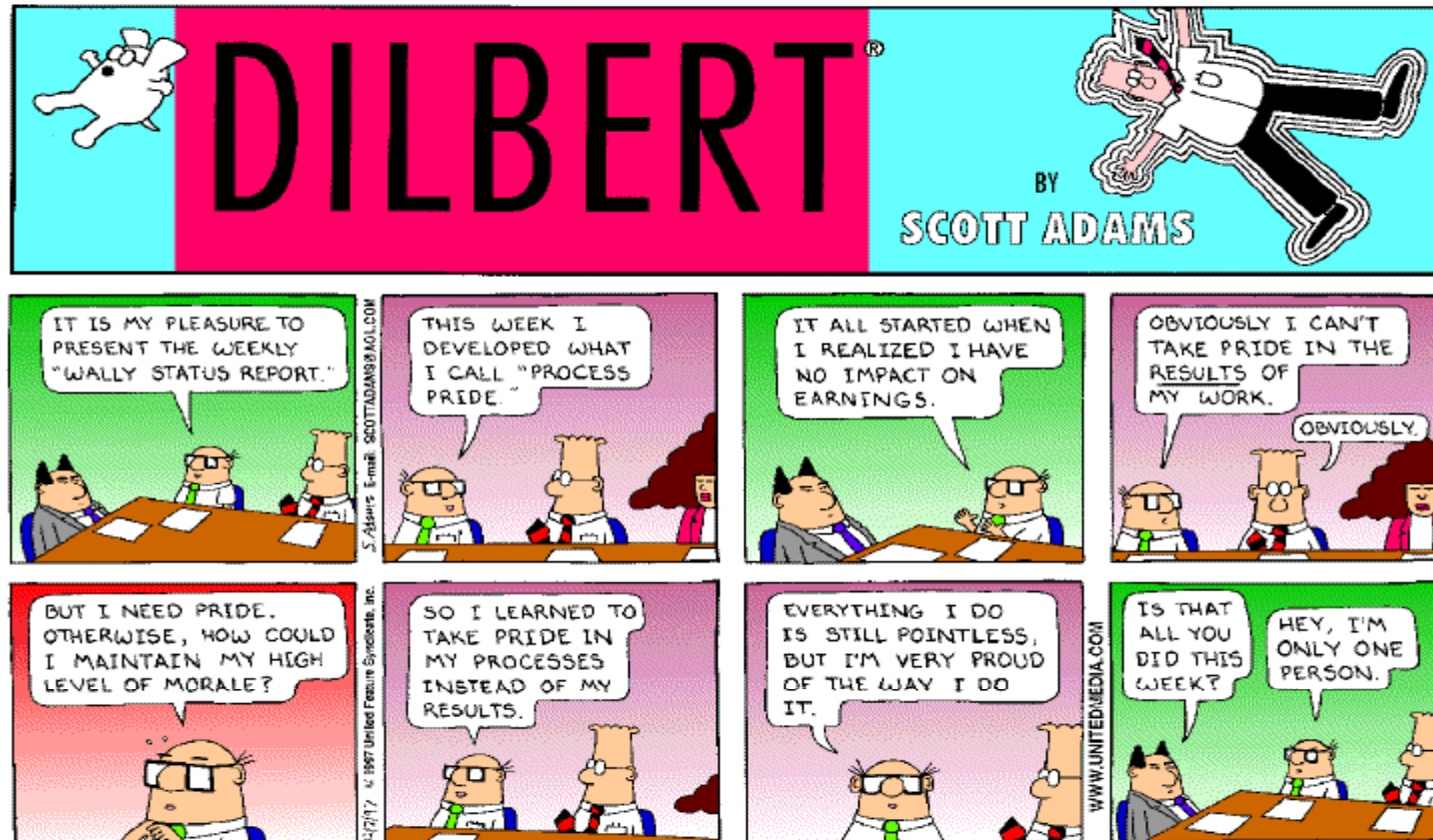
DOD Goals

New Enemies—New Threats --Defending our nation against its enemies is the first and fundamental commitment of the federal government. Today, that task has changed dramatically. Enemies in the past needed great armies and great industrial capabilities to endanger America. Now, shadowy networks of individuals can bring great chaos and suffering to our shores for less than it costs to purchase a single tank.

The National Security Strategy of the United States of America

September 2002

There is no instance of a country having benefited from prolonged warfare.

THE ART OF WAR, SUN TZU

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DOD Goals

The President's Proposal: (2009)

- Continues to wage an aggressive and global war on terrorism while supporting transformation of our nation's military capabilities;

- Provides unparalleled training and equipment for the troops;

- Funds the intelligence programs necessary to protect the country and support military needs;

- Enhances the quality of life for military personnel and their families;

- Incorporates innovative management practices that increase efficiencies; and

- Advances transformation for a more agile military force.

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Commercial "Best Practices

- **Six Sigma**
- **Total Quality Management (TQM)**
- **Capability Maturity Model Integration (CMMI)**
- **ISO 9000**
- **Etc.**

One must learn by doing the thing, for though you think you know it, you have no certainty until you try.

Aristotle

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Six Sigma

- Six Sigma seeks to identify and remove the causes of defects and errors in manufacturing and business processes.
  - It uses a set of quality management methods, including statistical methods, and creates a special infrastructure of people within the organization ("Black Belts" etc.) who are experts in these methods.
  - Each Six Sigma project carried out within an organization follows a defined sequence of steps and has quantified financial targets
    - *cost reduction*
    - *profit increase*

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Six Sigma
Business Versus Warfighter

6σ

Business

- *cost reduction*
- *profit increase*

Nuts!

General Tony McAuliffe, in reply to reply to a German surrender ultimatum, at the Battle of Bastogne, Belgium, during the Battle of the Bulge in World War II

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Six Sigma
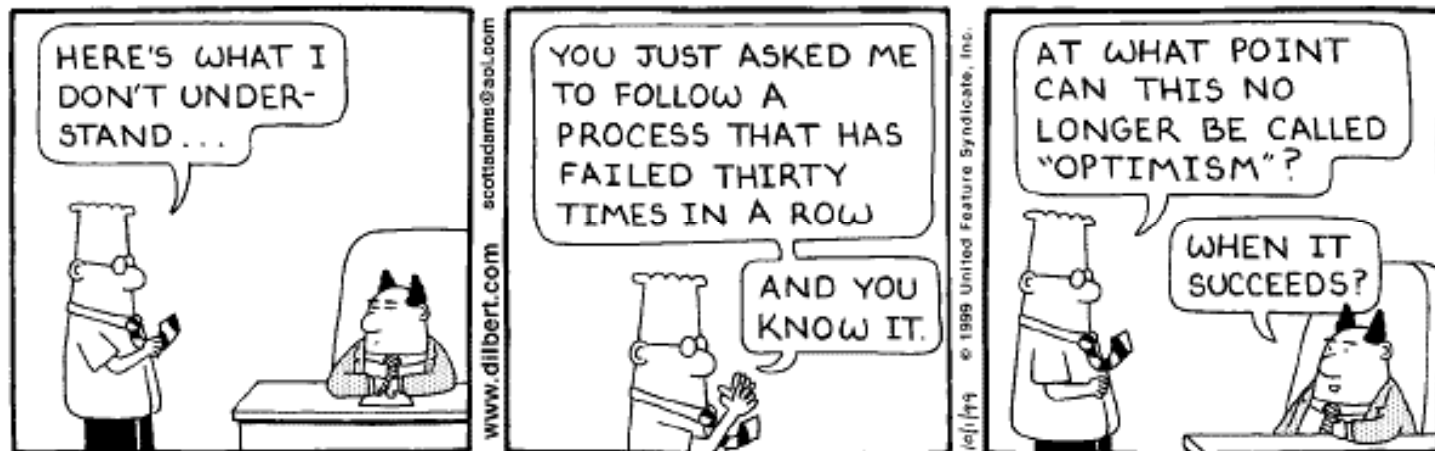# Business Versus Warfighter

Warfighter

- *cost avoidance*

- *increase effective application of resources*

- *speed is sometimes more critical that effectiveness*

"Originality is the most vital of all military virtues as two thousand years of history attest."

Sir Basil Henry, *Captain, British Army*

Total Quality Management (TQM)

- TQM is a management approach for an organization, centered on quality, based on the participation of all its members and aiming at long-term success through customer satisfaction, and benefits to all members of the organization and to society. ISO 8402:1994

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Total Quality Management (TQM)

Business Versus Warfighter

Business

- *Satisfy the customer*

- *Satisfy the supplier*

- *Continuous improvement*

Never tell people how to do things. Tell them what to do and they will surprise you with their ingenuity.

Gen. George S. Patton

Total Quality Management (TQM)

Business Versus Warfighter

Warfighter

- *High quality intelligence*
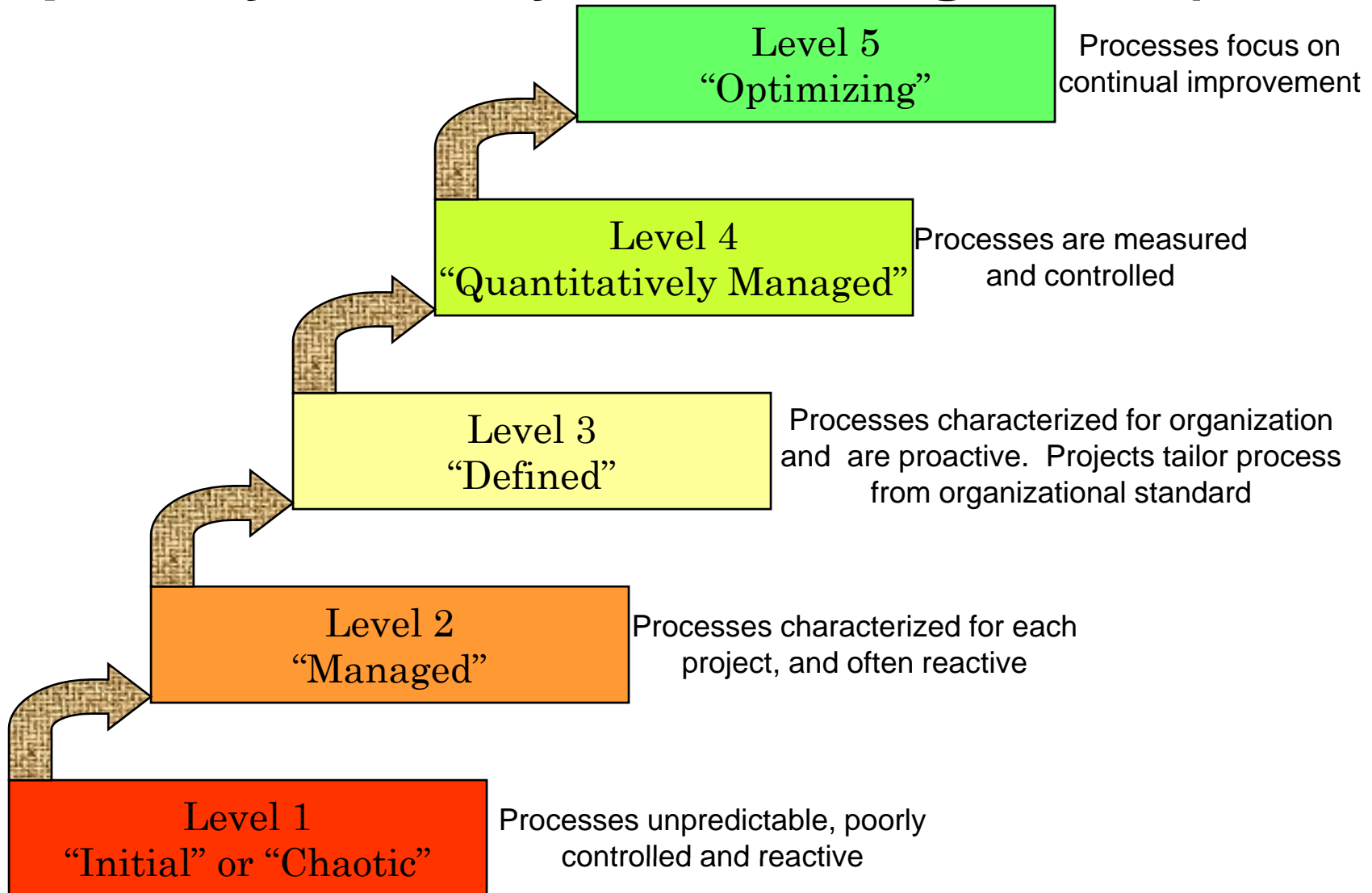
- *Time on target*

- *Independent operations*

"My own definition of leadership is this: The capacity and the will to rally men and women to a common purpose and the character which inspires confidence."

General Montgomery

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Capability Maturity Model Integration (CMMI)

- Capability Maturity Model Integration (CMMI) in software engineering and organizational development is a process improvement approach that provides organizations with the essential elements for effective process improvement. (SEI)

  - It can be used to guide process improvement across a project, a division, or an entire organization.

  - CMMI helps integrate traditionally separate organizational functions, set process improvement goals and priorities, provide guidance for quality processes, and provide a point of reference for appraising current processes

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Capability Maturity Model Integration (CMMI)

Level 5 "Optimizing" — Processes focus on continual improvement

Level 4 "Quantitatively Managed" — Processes are measured and controlled

Level 3 "Defined" — Processes characterized for organization and are proactive. Projects tailor process from organizational standard

Level 2 "Managed" — Processes characterized for each project, and often reactive

Level 1 "Initial" or "Chaotic" — Processes unpredictable, poorly controlled and reactive

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Capability Maturity Model Integration (CMMI)
Business Versus Warfighter

Business

- process improvement across
  - a project,
  - a division,
  - or an entire organization.

- provide guidance for quality processes

The Defense Department must change the way it develops software systems to get programs and tools to "the corporal on the street" in a matter of days, rather than on the current multiyear cycle.

Marine Gen. James Cartwright, vice chairman of the Joint Chiefs of Staff, 2009

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Capability Maturity Model Integration (CMMI)
Business Versus Warfighter

Warfighter

- Complete requirements gathering (spiral model may be required)

- Effective agile systems to meet operations requirements

- Even in large-scale DOD projects, rapidly changing requirements might be driver for process selection

"Strategy is the art of making use of time and space. Space we can recover; lost time, never."

Napoleon Bonaparte

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ISO 9000

- ISO 9000 is a family of standards for quality management systems. ISO 9000 is maintained by ISO, the International Organization for Standardization and is administered by accreditation and certification bodies. Some of the requirements in ISO 9001 (which is one of the standards in the ISO 9000 family) include:
  - a set of procedures that cover all key processes in the business;
  - monitoring processes to ensure they are effective;
  - keeping adequate records;
  - checking output for defects, with appropriate and corrective action where necessary;
  - regularly reviewing individual processes and the quality system itself for effectiveness; and
  - facilitating continual improvement

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The Process…

- …should NEVER be more important that the product.
- ….at least, in the DOD

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ISO 9000
Business Versus Warfighter

Business

- monitoring processes to ensure they are effective;

- keeping adequate records;

- checking output for defects, with appropriate and corrective action where necessary;

- regularly reviewing individual processes and the quality system itself for effectiveness; and

- facilitating continual improvement

Decisive force is, essentially, an addendum to Weinberger's criteria. It is "the concept of applying decisive force to overwhelm our adversaries and thereby terminate conflicts swiftly with a minimum loss of life."

National Military Strategy, General Colin Powell

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ISO 9000
Business Versus Warfighter

Warfighter

- Complete requirements gathering (Spiral model)
- Effective agile systems to meet operations requirements
- Often, in the DOD, we do not have time nor funds for continual improvement. We need to get it right (or as close to right as possible) the first time

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It has been said…

- That as long as you had a quality process and good records-keeping, you could manufacture concrete lifejackets and be ISO 9000 certified

- This is untrue (at least since ISO 9000:2000 – which FINALLY addressed customer satisfaction).

- However – in the DOD – it is difficult to find the RIGHT customer

Never give in--never, never, never, never, in nothing great or small, large or petty, never give in except to convictions of honor and good sense. Never yield to force; never yield to the apparently overwhelming might of the enemy.
                                              Winston Churchill

Thoughts

- Best practices are NOT things the DOD should avoid
- However – always ask "Does it enhance the military objective?"
- Does it HELP (rather than HINDER) the Warfighter?
- You need to distance yourselves from the "zealots" and objectively assess the usefulness of each best practice
- Experience outweighs marketing brochures
- Apply "best practices" with some art

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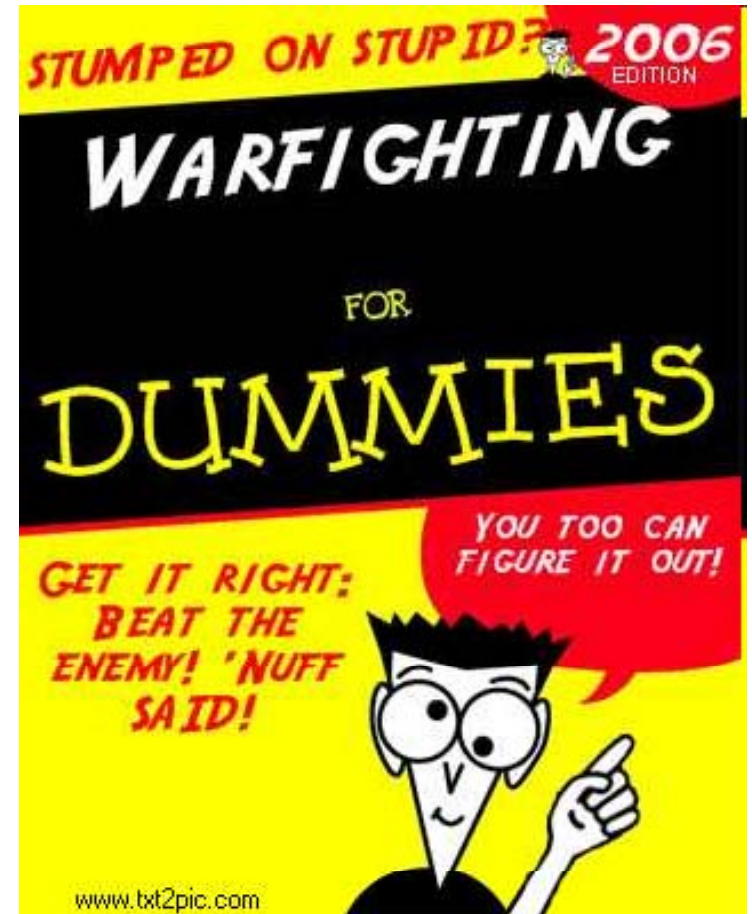
The "art" of applying

- The secret is NOT knowing what to include, the secret is knowing what NOT to include
- Pick a best practice that will help with your problem areas. If you don't know what your problem areas are, then your first priority should NOT be selecting a best practice.
- Know what you need BEFORE you look for a solution!

IS
YOUR
PROBLEM
HARDWARE
OR
SOFTWARE ?
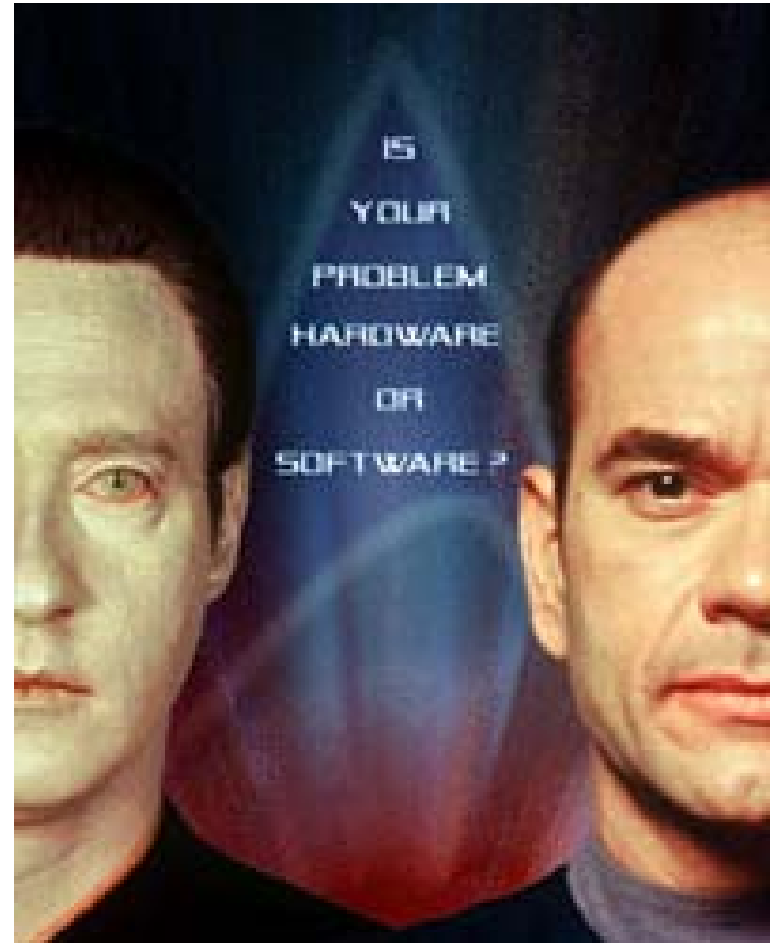
Tailor the Best Practices

- Understand when to apply – and when NOT to apply

- Use the experience of your employees

- Act, don't REACT!
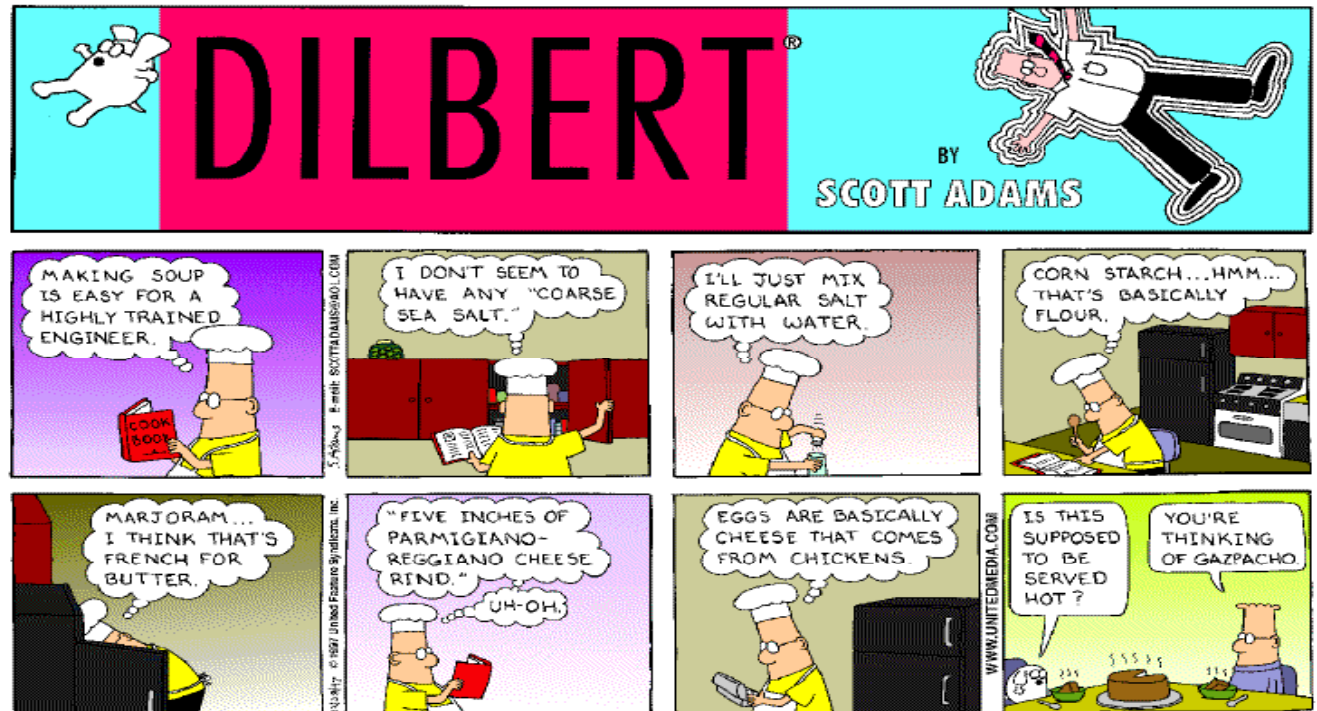
A Question of Balance

DOD goals are unique – we are NOT some software company looking to maximize profits. We do not have customers, we have Warfighters.

Common sense and experience, along with honest research and feedback from other users, will help you select effective best practices.

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To sum it up

- Implementing a new "best practice" will unquestionably cause initial delays due to training and "ramp up".
- It's easier to start simple, and add slowly.
- Start with too much, and morale suffers.
- Use best practices appropriate for the size of the project.
- Pick a best practice that will help you with requirements and integration/interfaces. These continue to be the largest problem in large-scale software development

"Morale makes up three quarters of the game, the relative balance of manpower accounts for only the remaining quarter."

Napoleon Bonaparte, Emperor of France and Military leader

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Words to the Wise

- Get buy-in from developers, project managers, program managers, and organizational management
- Keep all levels "in the loop", and communicate effectively
- Do research, and listen to your people

Without effective buy-in, or without listening to your developers LEGITIMATE concerns, you just might implement a "worst practice"

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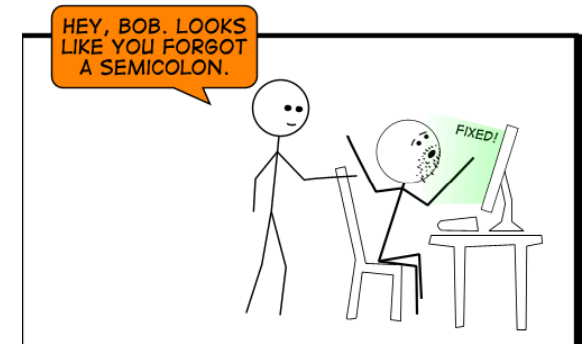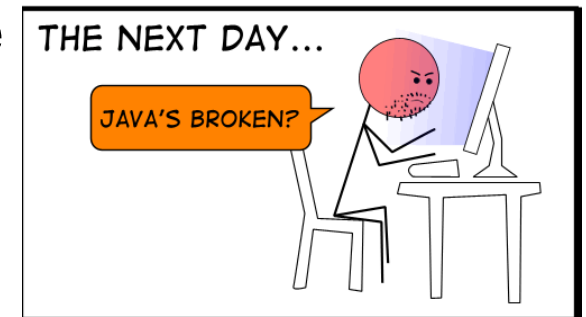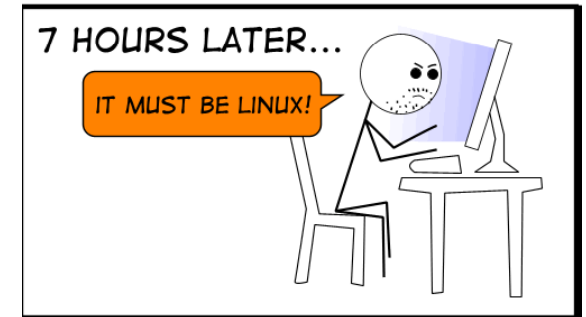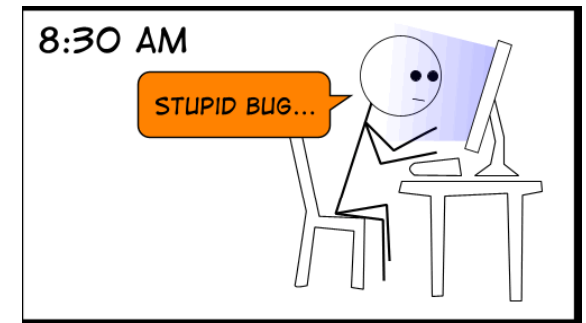
Final Thoughts

- How do you KNOW it will work in the DOD?
- Is it appropriate for your size of project?
- Implement wisely, and based on proven experience.
- In the DOD, more than profit is at stake!

Current Commercial Best Practice
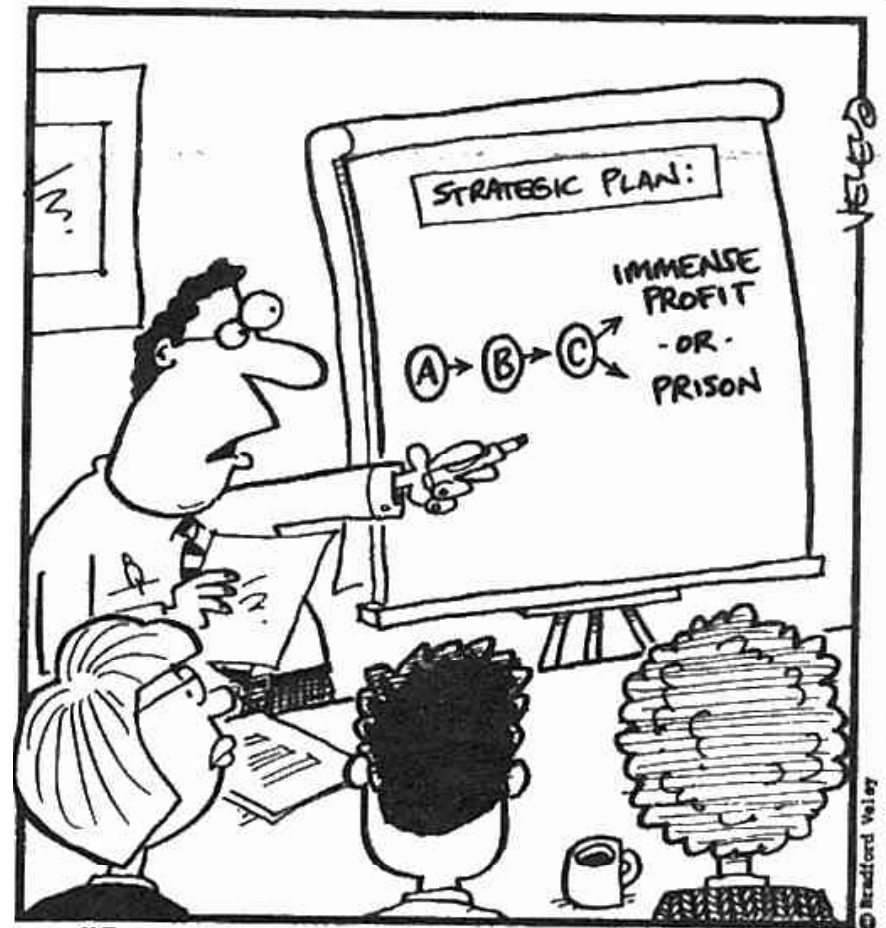
"Stay with me now, people, because in step C, things get a bit delicate."